

Creating Healthy Transportation Infrastructure for a More Active Population

Joseph Perez

Bicycle Coordinator, City of Phoenix

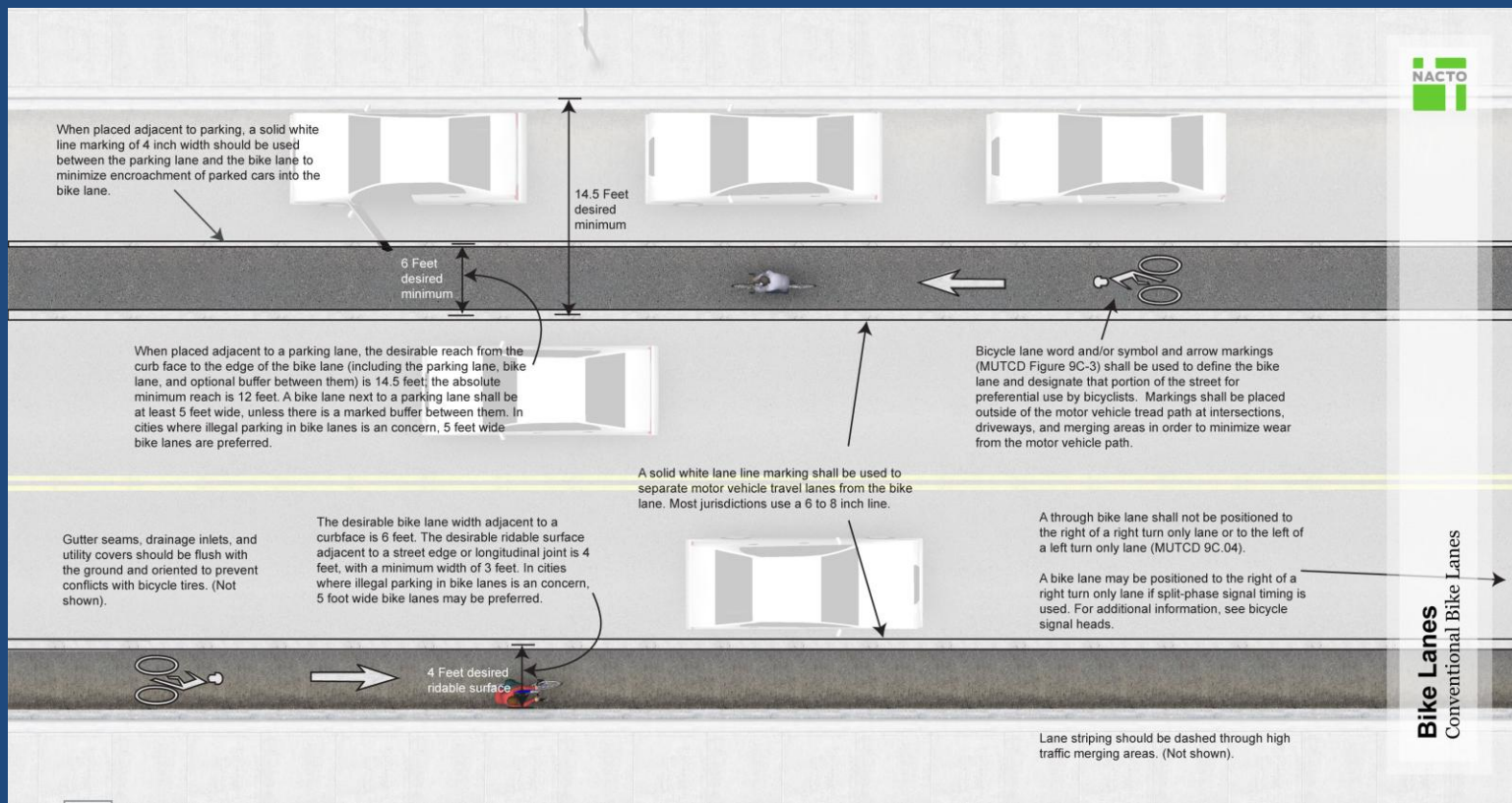
Arizona Planning Association Conference
September 29, 2011

Increasing biking and walking is challenging

Old and New
tools that you can use

Bike Lanes

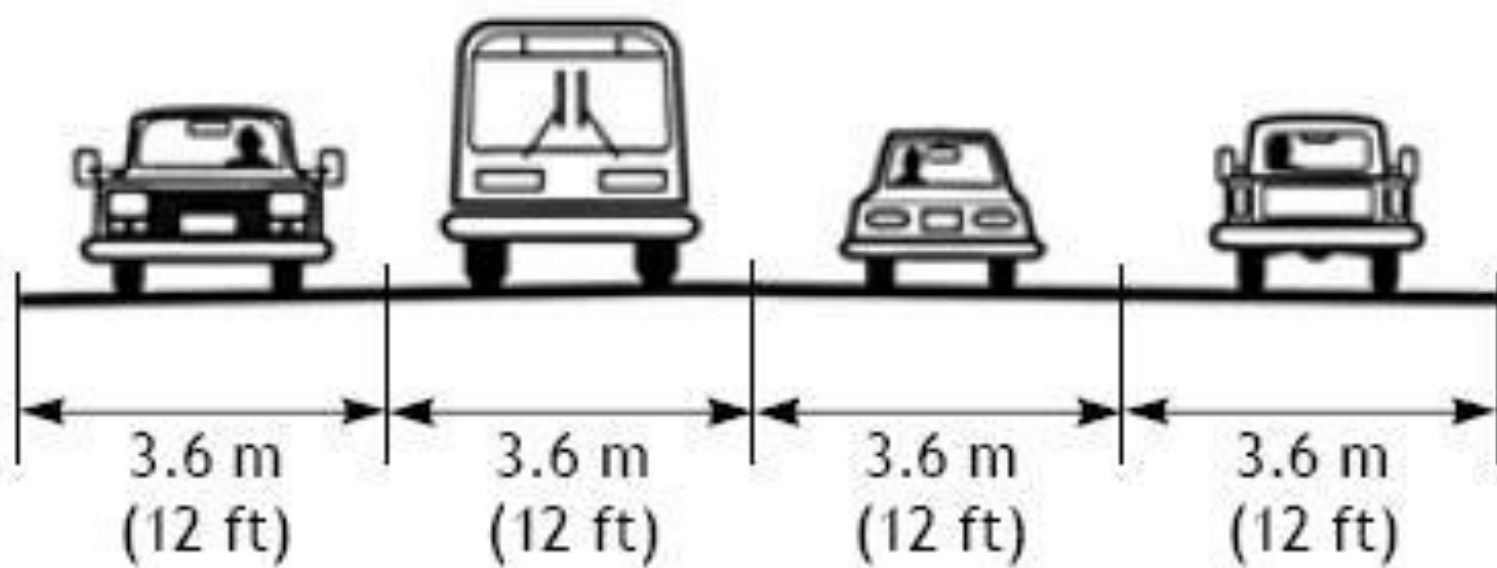
- 6 feet wide including paint
- Sign R3-17, Stencil
- Moves cars 6 feet away from sidewalks



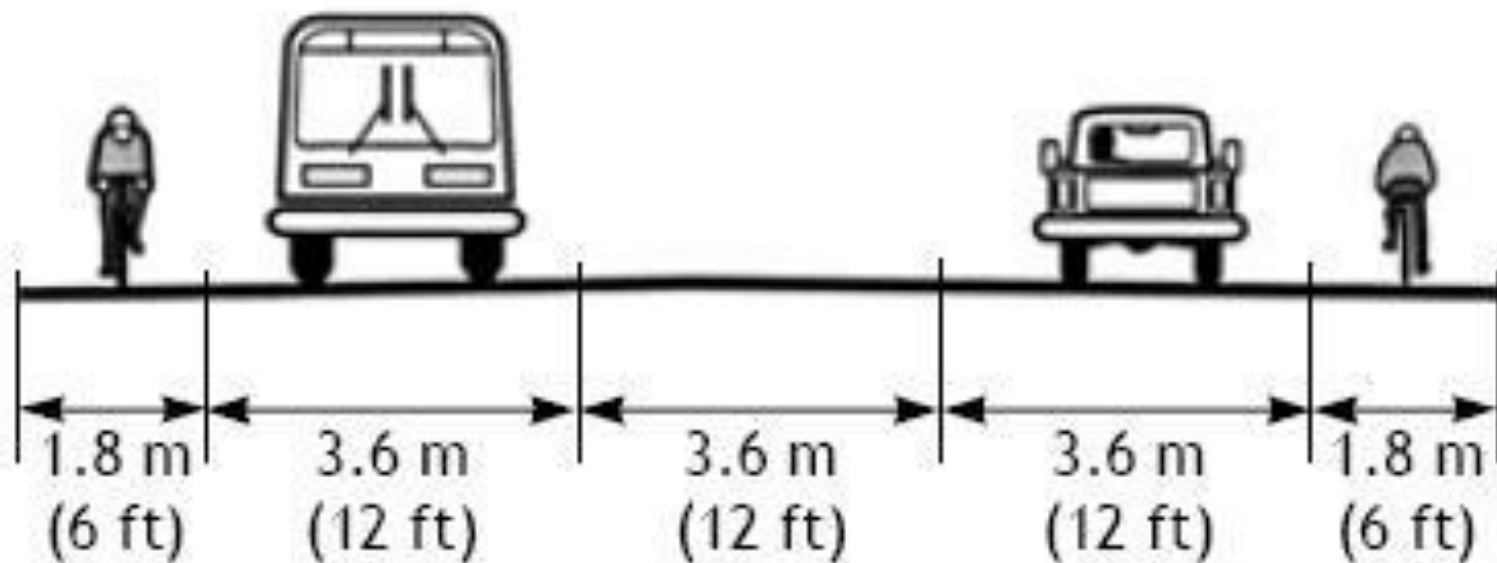
Road Diet

- Existing striping
 - 2 lanes each direction and 18,000 ADT
 - 42 feet wide minimum
- New striping
 - 1 lane in each direction, Two Way Left Turn Lane,
 - Bike Lane on each side of the street
 - 6' Bike, 10' Through, 10' TWLTL, 10' Through, 6' Bike

BEFORE



AFTER



Before

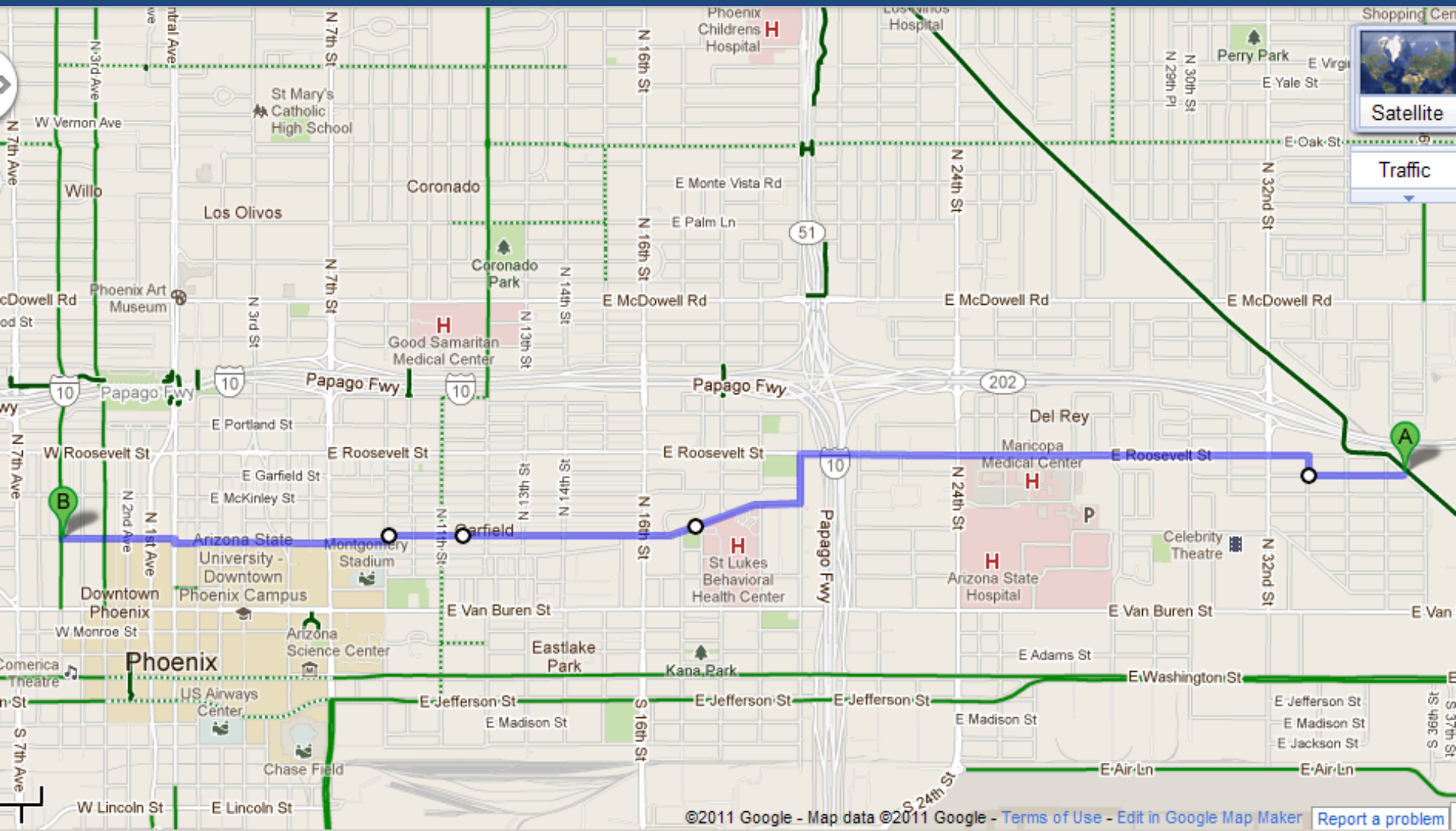


After



Bike Boulevard

4.6 miles of bike lanes, bike dots and shared lane markings and guide signs on collector and local streets Fall 2011



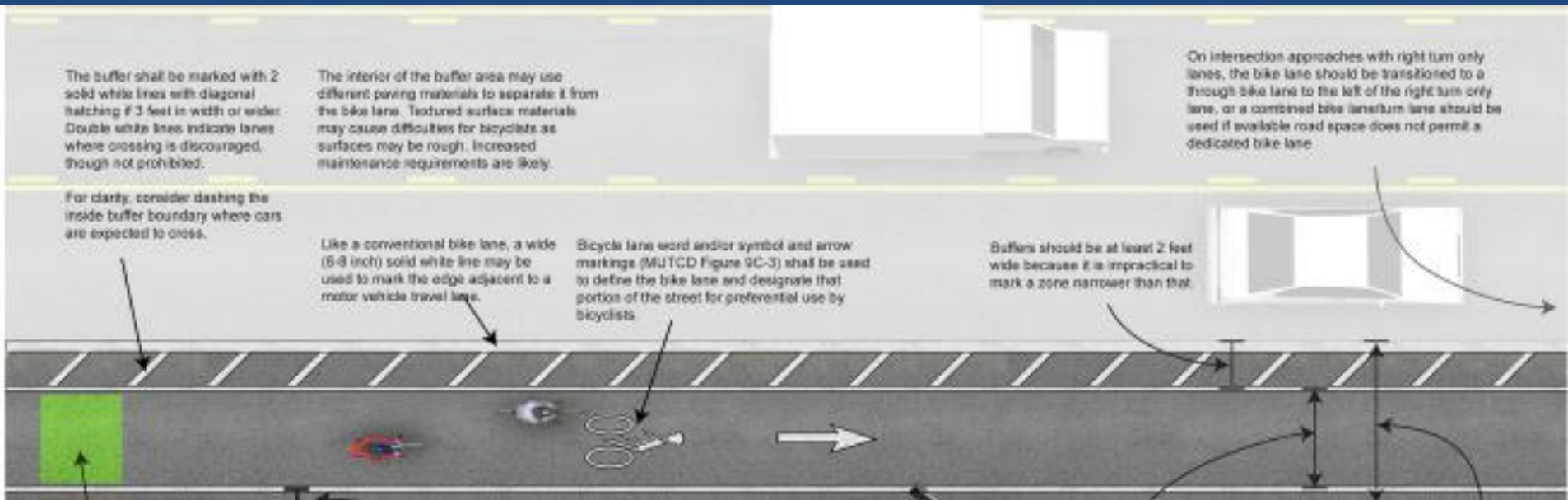
Bike dots used in Seattle and soon in Phoenix



24 inches



Buffered Bike Lane



Central Avenue

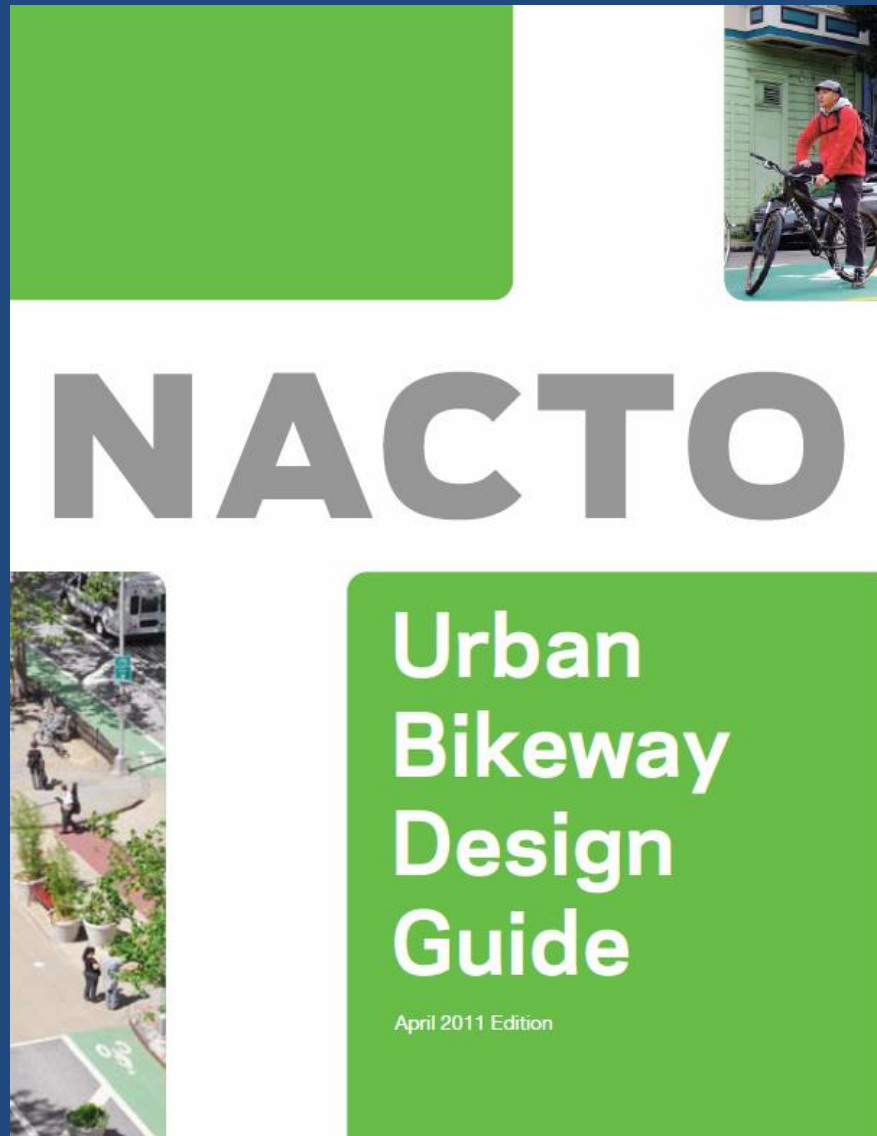
from Camelback Road to Bethany Home Road

3 lanes in each direction will become 2 lanes in each direction + buffered bike lane (1 mile)

connects Murphy Bridle Trail to METRO Light Rail

15th Ave from Dunlap to Thomas where appropriate

NACTO Urban Bikeway Design Guide



NACTO Members

Atlanta, Baltimore, Boston, Chicago
Detroit, Houston, Los Angeles
Minneapolis, New York City,
Philadelphia, Phoenix, Portland,
San Francisco, Seattle, Washington, D.C.

Affiliates: Arlington VA, Austin, Cambridge,
Hoboken

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304 Pages

21 Treatments

Lots of Photos

Digital Updates

Living Document

REQUIRED



The desirable bike lane width adjacent to a curbface is 6 feet. The desirable rideable surface adjacent to a street edge or longitudinal joint is 4 feet, with a minimum width of 3 feet. In cities where illegal parking in bike lanes is an concern, 5 foot wide bike lanes may be preferred.

“ The recommended width of a bike lane is 1.5m(5 feet) from the face of a curb or guardrail to the bike lane stripe.

“ If the [longitudinal] joint is not smooth, 1.2m(4 feet) of rideable surface should be provided.

AASHTO. (1999). Guide for the Development of Bicycle Facilities.



When placed adjacent to a parking lane, the desirable reach from the curb face to the edge of the bike lane (including the parking lane, bike lane, and optional buffer between them) is 14.5 feet; the absolute minimum reach is 12 feet. A bike lane next to a parking lane shall be at least 5 feet wide, unless there is a marked buffer between them. In cities where illegal parking in bike lanes is an concern, 5 feet wide bike lanes are preferred.

“ If parking is permitted, ... the bike lane should be placed between the parking area and the travel lane and have a minimum width of 1.5 m (5 feet).

“ Where parking is permitted but a parking stripe or stalls are not utilized, the shared area should be a minimum 3.6 m (12 feet) adjacent to a curb face ... If the parking volume is substantial or turnover is high, an additional 0.3 to 0.6 m (1 to 2 feet) of width is desirable.

AASHTO. (1999). Guide for the Development of Bicycle Facilities.



The desirable bike lane width adjacent to a guardrail or other physical barrier is 2 feet wider than otherwise in order to provide a minimum shy distance from the barrier.

“ On new structures [with railings], the minimum clear width should be the same as the approach paved shared use path, plus the minimum 0.6-m (2-foot) wide clear areas.

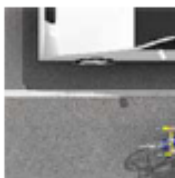
AASHTO. (1999). Guide for the Development of Bicycle Facilities.

Required Elements from AASHTO

RECOMMENDED



Bike lanes should be made wider than minimum widths wherever possible to provide space for bicyclists to ride side-by-side and in comfort. Reduce bike lane width only after other street elements (e.g., travel lanes, medians, median offsets) have been reduced to their minimum dimensions. If sufficient space exists to exceed desirable widths, see buffered bike lanes. Very wide bike lanes may encourage illegal parking or motor vehicle use of the bike lane.



When placed adjacent to parking, a solid white line marking of 4 inch width should be used between the parking lane and the bike lane to minimize encroachment of parked cars into the bike lane.

“An additional 100-mm (4-inch) solid white line can be placed between the parking lane and the bike lane. This second line will encourage parking closer to the curb, providing added separation from motor vehicles, and where parking is light it can discourage motorists from using the bike lane as a through travel lane.”

AASHTO. (1999). Guide for the Development of Bicycle Facilities.

“In a case study looking at the influence of pavement markings and bicyclist positioning, researchers found that, ‘the bicycle lane [with an edge line demarcating the parking lane] was the most effective at keeping cars parked closer to the curb and encouraging cyclists to ride in a consistent position at intersections.’”

Pedestrian and Bicycle Information Center. (2006). BIKESAFE: Bicycle Countermeasure Selection System. Publication No. FHWA-SA-05-006, Federal Highway Administration, Washington, DC.



Gutter seams, drainage inlets, and utility covers should be flush with the ground and oriented to prevent conflicts with bicycle tires.

“Since bicyclists usually tend to ride a distance of 0.8-1.0 m (32-40 inches) from a curb face, it is very important that the pavement surface in this zone be smooth and free of structures. Drain inlets and utility covers that extend into this area may cause bicyclists to swerve, and have the effect of reducing the usable width of the lane. Where these structures exist, the bike lane width may need to be adjusted accordingly.”

AASHTO. (1999). Guide for the Development of Bicycle Facilities.

Recommended Elements

OPTIONAL



"Bike lane" signs (MUTCD R3-17) may be located prior to the beginning of a marked bike lane to designate that portion of the street for preferential use by bicyclists. The 2009 MUTCD lists bike lane signs as optional; however, some states still require their use.

If the word, symbol, and/or arrow pavement markings shown in Figure 9C-3 are used, Bike Lane signs (see Section 9B.04) may also be used, but to avoid overuse of the signs not necessarily adjacent to every set of pavement markings.

Federal Highway Administration. (2009). Manual on Uniform Traffic Control Devices.



On bike lanes adjacent to a curb, "No Parking" signs (MUTCD R8-3) may be used to discourage parking within the bike lane.



Color may be used to enhance visibility of a bike lane.

Optional Elements

Image Gallery



BALDWIN PARK, CA



WASHINGTON, DC



OLYMPIA, WA



KANSAS CITY, KS



SAN MARCOS, TX



MADISON, WI



CHAPEL HILL, NC



AUSTIN, TX



AUSTIN, TX



DEL MAR, CA



AUSTIN, TX

Great Photos

2009 MUTCD

Chapter 9 Bicycle Facilities

Manual on Uniform Traffic Control Devices

for Streets and Highways

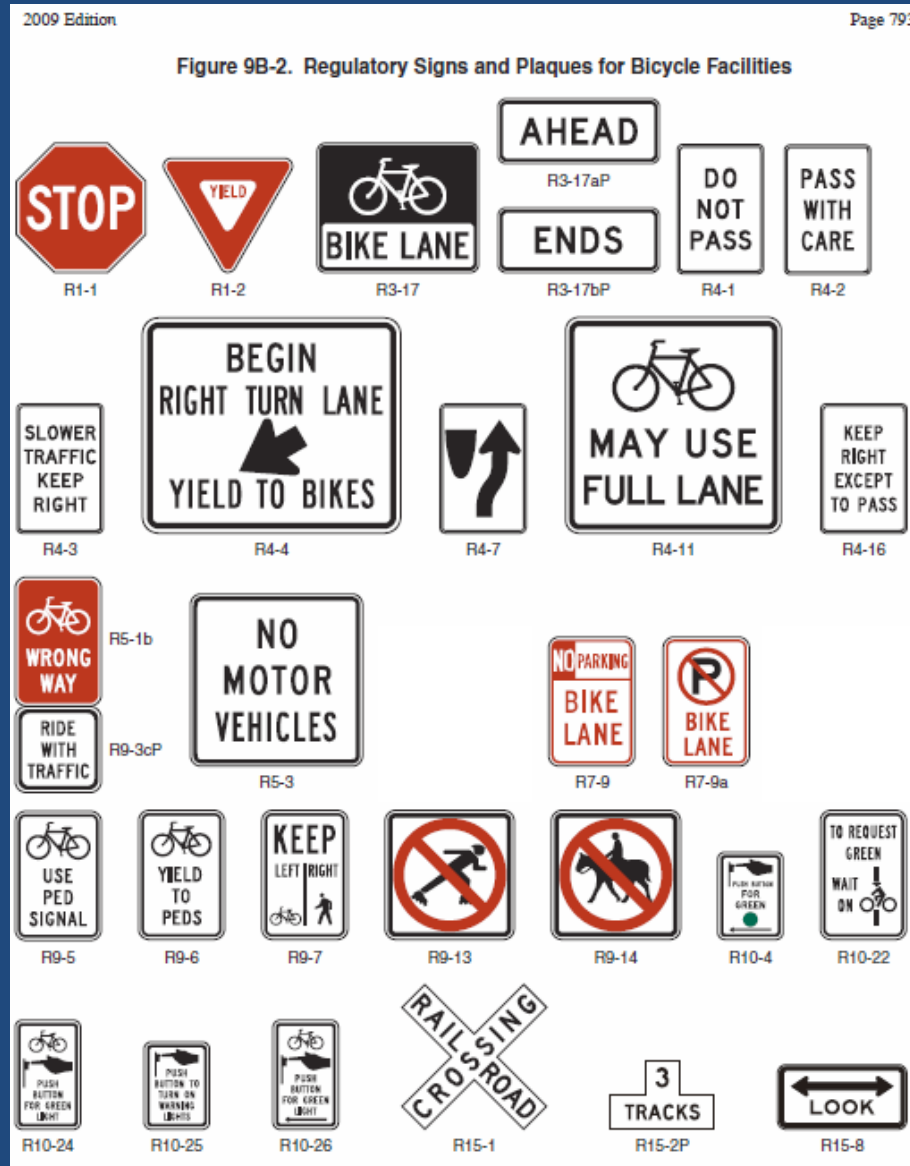
2009 Edition



U.S. Department of Transportation
Federal Highway Administration

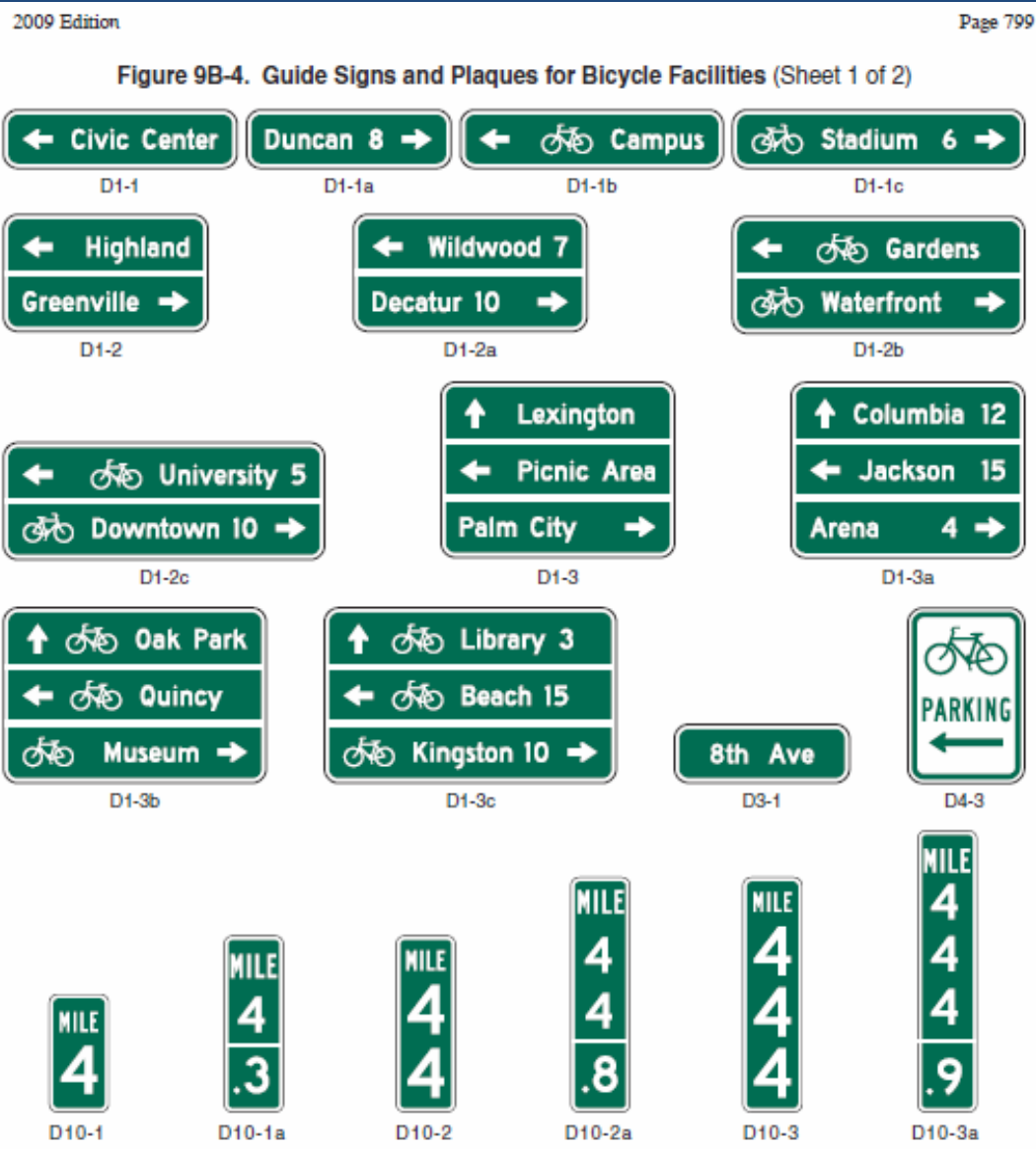
2009 MUTCD

Bicycle Facilities Regulatory Signs

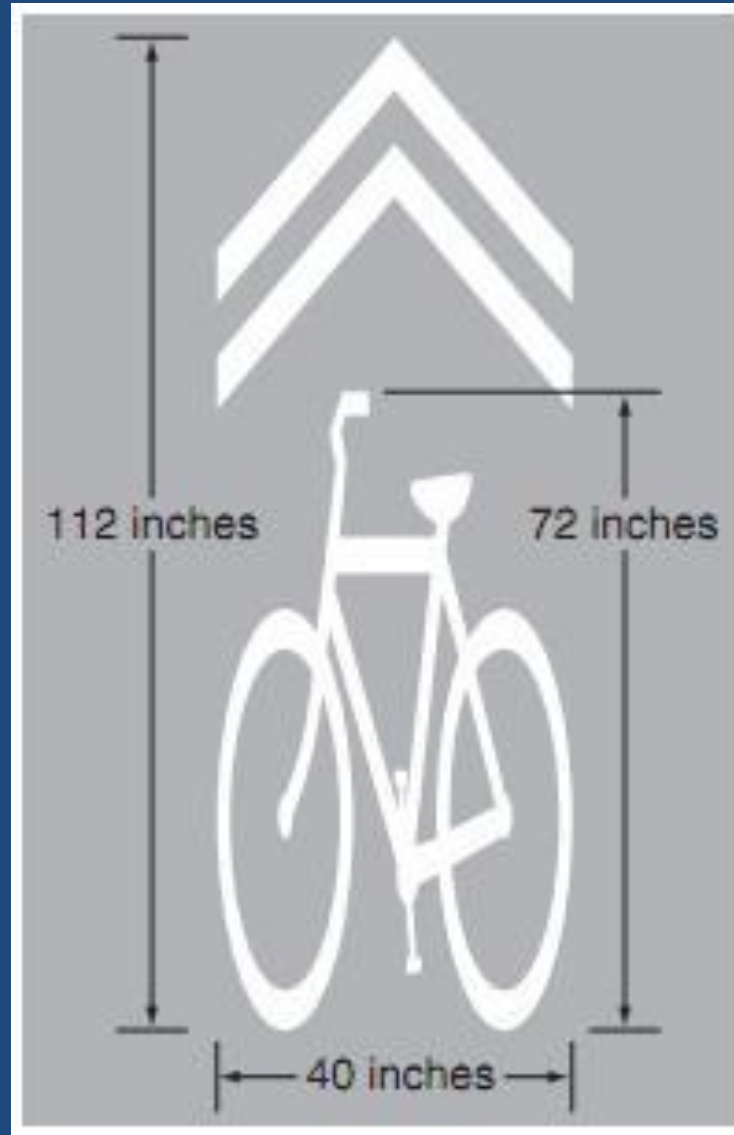


2009 MUTCD

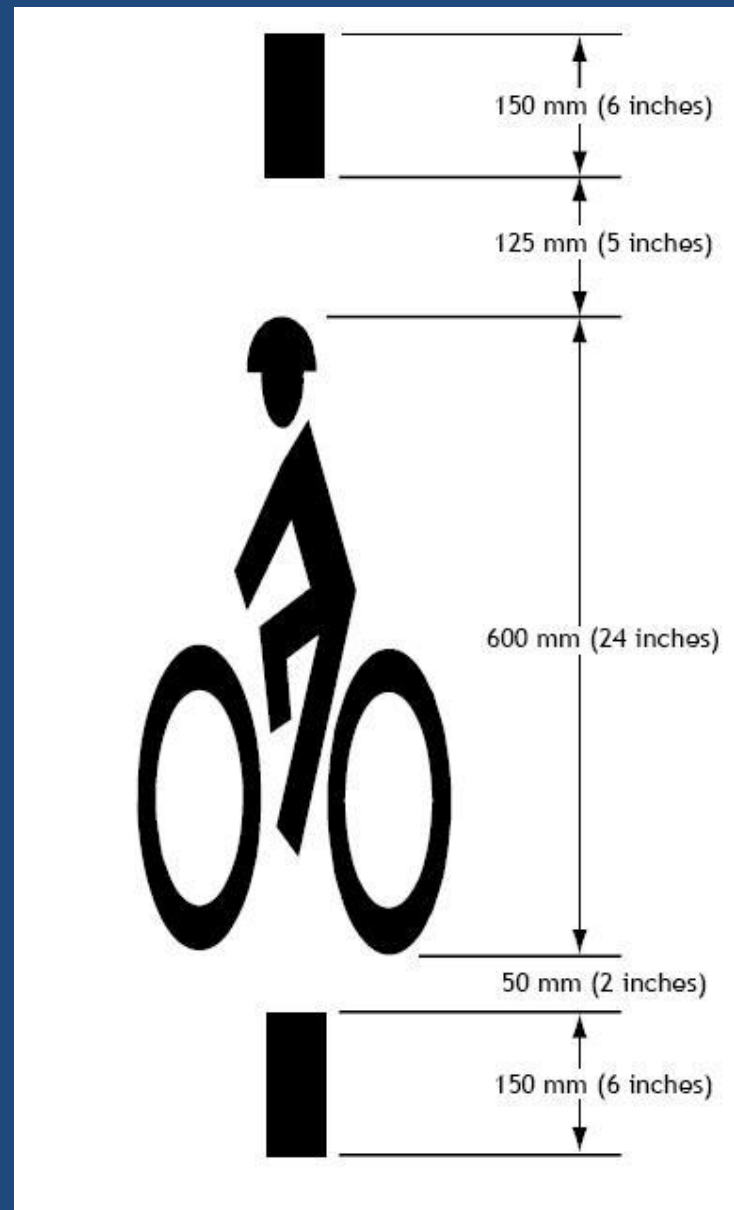
Bicycle Facilities Guide Signs



Shared Lane Marking



Bicycle Loop Detector Marking





Green Paint

Phoenix is considering installing green paint to bring attention to bicycles present

FHWA

The Federal Highway Administration receives occasional inquiries about what bicycle facilities, signs, and markings are permitted in the Manual on Uniform Traffic Control Devices (MUTCD).

The link below lists various bicycle-related signs, markings, signals, and other treatments and identifies their status (e.g., can be implemented or currently experimental) in the 2009 version of the MUTCD.

http://www.fhwa.dot.gov/environment/bikeped/mutcd_bike.htm

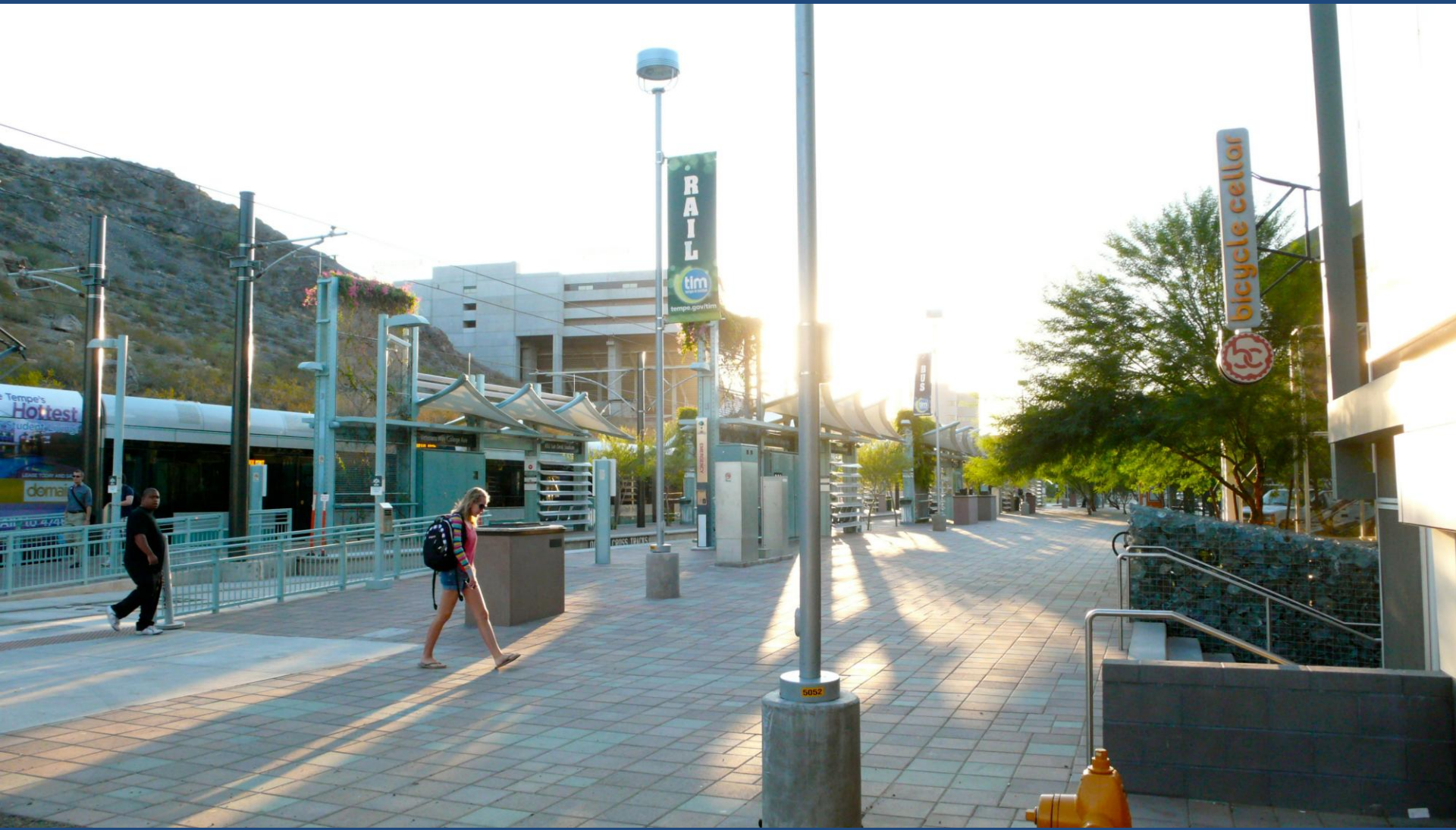
The Bicycle Cellar

- Tempe Transportation Center
 - Valley Metro Buses
 - METRO light rail
 - Orbit Shuttle
- 112 indoor, secure, two tiered bike racks
- 4 showers and changing rooms
- 72 lockers
- 20 hour access, 4:00am – 12:00midnight
- www.TheBicycleCellar.com



August 2009
Showers
Lockers
Two tiered bike racks

20 feet from METRO light rail platform
perfect for bicycling to work to or from Tempe



August 2011







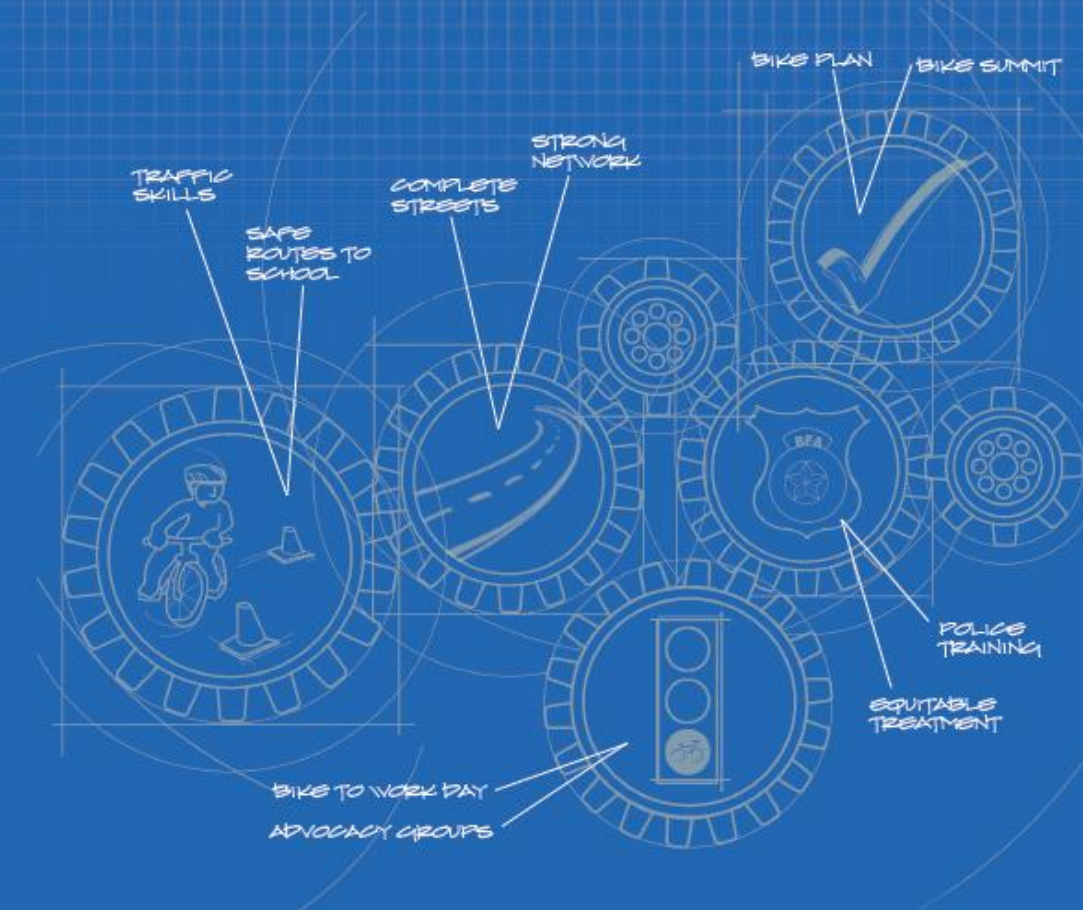
Bicycle Friendly Community

League of American Bicyclists

www.bikeleague.org

Municipality Self Assessment

www.bikeleague.org/programs/bicyclefriendlyamerica/communityscorecard



Roadmap to becoming a Bicycle Friendly City

BicycleFriendlyAmerica

THE BLUEPRINT

2011



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- 2** The Bicycle Friendly Community Program Grows Up
 - 6** Bicycle Friendly Community List
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The articles in this magazine were written by League staff, including Andy Clarke, Meghan Cahill, Alison Dewey, Darren Flusche, Elizabeth Kiker, Bill Nesper, Jeff Peel and Carly Sieff. Cover illustrations by Katie Omberg.

THE FIVE EEEs

Engineering Education Encouragement Enforcement Evaluation

1st Street Pedestrian Improvements

- Widen sidewalks to 12 feet
- Narrow through lanes to 14 feet
- Add pedestrian scale lighting
- Add benches and bike racks
- Improve Landscaping

Before



After



Before



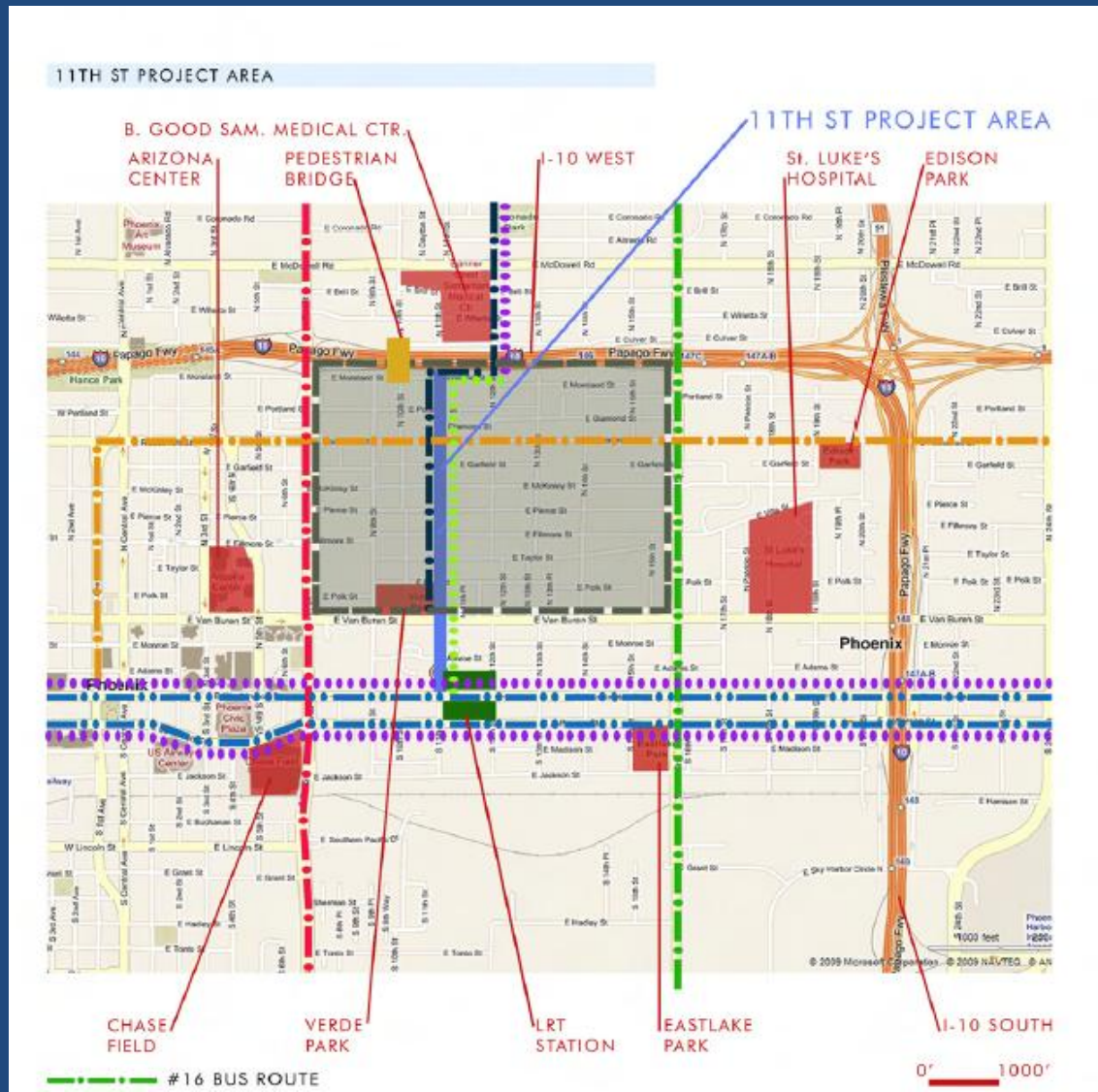
After

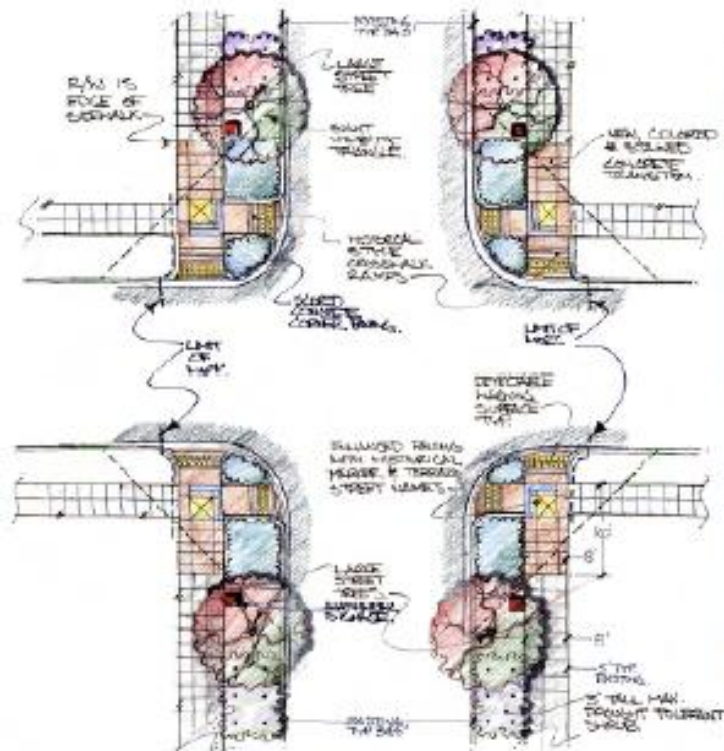


11th Street Pedestrian Improvements

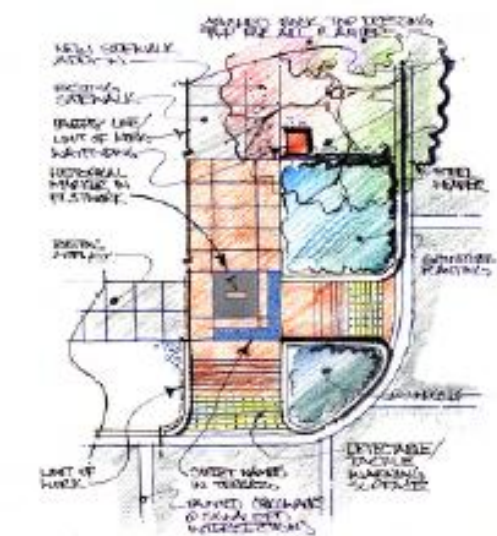
- Encourage walking
- Connect neighborhood to METRO light rail
- 4,460 feet
- 8 feet wide side walk
- 6 feet wide bike lane

11th Street Pedestrian Improvements





STREETScape AT TYPICAL INTERSECTION Scale 1/8"=1'



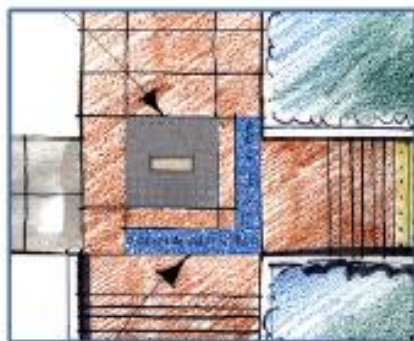
HISTORIC MARKER & ENHANCED PAVING AT STREET CORNER Scale 1/4"=1'



CAST PLAQUES



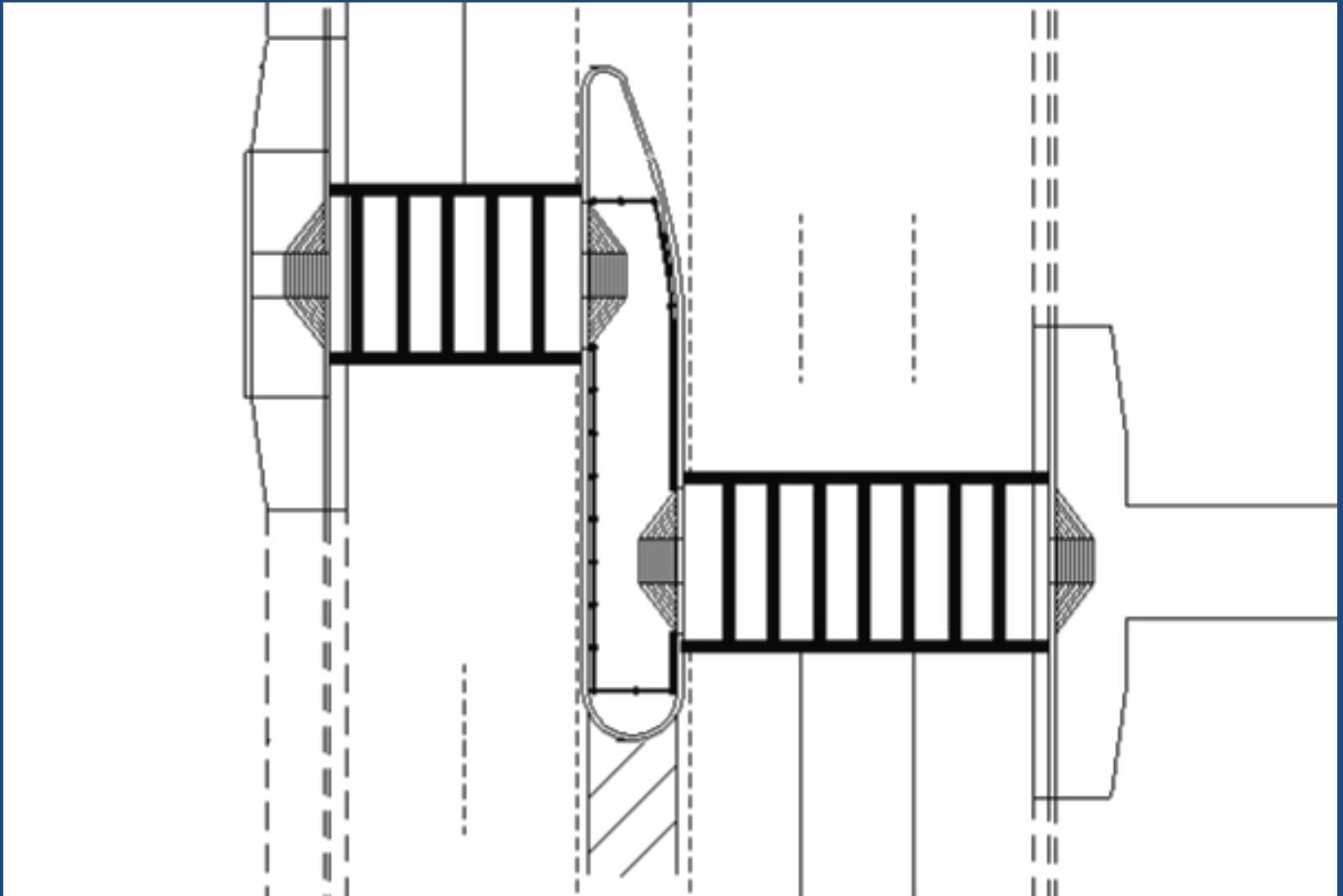
TERRAZZO PAVING



HISTORIC MARKER (ENLARGEMENT)

11th Street Intersection Treatment

Two Stage Crosswalk with pedestrian refuge



Two Stage Crosswalk with pedestrian refuge



SanTan Wheelie Jam

Bicycle Festival



SAN TAN
Wheelie Jam
April 23rd, 2011 12pm - 4pm

ENTERTAINMENT
Necronauts • Hello The Mind Control
Liam & the Ladies • Tremulants • Amen Cowboy
Emcees: Leslie Barton & Tim Tagtmeyer
*Brought to you by Black Cactus Records

ACTIVITIES
SanTan Wheelie Competition • Bike Polo • Bike Ride/Parade at 11am
Roller Racing • BMX Demo • Custom Bike Show • Foot Down/Slow Ride
Bike Mechanic Build-Off • Mini/Tall Bike Races • Trials/Fixie Tricks Demo
Bike Demos • Kids Bike Rodeo/Safety Demo
Kids Helmet Decorating • Bike Blenders

LOCATION
Steele Indian School Park
300 East Indian School Road
Phoenix, AZ 85012

SPONSORS
DEVIL RIDE • Epicenter • SanTan • HIGHWIRE • Gordo

General Admission Ticket: **Free Event to the Public**
*General admission begins at 12pm and event ends at 4pm
* Beer Garden guests must be 21 or over (Valid picture ID must be presented for admission).
* This is a rain or shine



BIKE BLENDERS

Bicycle Blenders



Bridge Artistic Elements

Three bridges that cross the Apache Wash and the Cave Creek Wash will incorporate exciting art elements. At each bridge site, pictures will be taken of the native vegetation at the elevation of the bridge. These photos will be recreated as tile mosaics depicting the natural desert scenery, giving the illusion of an uninterrupted desert view. Each bridge will also feature balconies with shaded seating areas.



Shared Use Path

A five-mile-long multi-use path will run along the north side of Sonoran Boulevard. This 10-foot-wide meandering concrete trail will accommodate many uses as it winds into the desert up to a ¼ mile from the roadway.

Sonoran Paseo
5 miles long
10 feet wide
3 Pedestrian
bridges

FREE STUFF YOU CAN DO

- Bicycle Summit – annually in March
- Bicycle Initiatives Subcommittee
 - Meets monthly, discusses city wide bicycle matters
- Bicycle Friendly Fridays
- Dept. Bicycle Plan & City Bicycle Master Plan
- National Bike Month every May, but April in Phx
- Bike to Work, Bike to School, annually in April
- Trip Reduction Surveys

Contact Information

Joseph Perez

Bicycle Coordinator

Traffic Engineer II

City of Phoenix

Street Transportation Department

(602) 534-9529

joseph.perez@phoenix.gov

www.phoenix.gov/bicycling